CLAIMS

What is claimed is:

1.   A method of automatically managing a plurality of remote workers carrying out a variety of jobs for one or more customers, each job including a process of a set of one or more task steps and a set of units of source data, the method comprising:

storing in a database information on each remote worker including one or more task skills of the worker that define the types of task steps the worker is certified to carry out;

storing in the database information on the customers;

storing in the database information on each process, including the customer of the process, the order of carrying out the task steps of the process, how the input for each task step is obtained from the results of prior task steps in the process, and any pre-processing and post-processing required;

receiving the units of source data from the customers;

carrying out any defined pre-processing for the received source data;

storing in a task data structure information on tasks to be completed, each task defined by a task step and a unit of input for the task step;

storing in the database information on each remote worker including one or more task skills of the worker that define the types of task steps the worker is certified to carry out;

receiving requests from one or more of the remote workers for tasks;

upon receiving a task request from a remote worker, dispatching a task from the stored tasks to be completed to the remote worker according to one or more task dispatch rules;

receiving the task results from the remote workers for the task dispatched to the workers;

carrying out any defined post-processing of the task results corresponding to the tasks of a process for a unit of source data to produce result data for the unit of source data;

sending the result data to the customers;

training workers at one or more task skills according to one or more training scenarios related to the task skills,

such that the training of workers at one or more task skills occur automatically substantially without human management.

2. A method as recited in claim 1, wherein the variety of jobs include a plurality of members of the set consisting of: data entry, telesales, voice transcription, translation, image categorization, sales lead incubation, auditing, repair of documents after OCR, photo retouching, paralegal processes, call center quality assurance, and editorial work.

3. A method as recited in claim 1, wherein managing the capacity includes determining one or more of the training scenarios based on the distribution of tasks in the task data structure, required task skills, and available workers having the required task skills.

4. A system for automatically managing a plurality of remote workers carrying out a variety of jobs for one or more customers, each job including a process of a set of one or more task steps and a set of associated source data units, the system connected to a network, each worker having one or more task skills and able to communicate with the system using a worker terminal connectable to network, the system comprising:

a storage subsystem containing a task data structure to store tasks to be completed, each task defined by a task step and a unit of input for the task step;

a pre-processor coupled to the storage subsystem to accept units of source data from the customers and to carry out any defined pre-processing for the accepted source data;

a task dispatcher coupled to the network and to the task data structure to accept requests from one or more of the remote workers for tasks and to dispatch a task from the task data structure to a remote worker requesting tasks, the dispatching according to one or more task dispatch rules;

5   a task submission unit coupled to network to receive the task results from the remote workers for the task dispatched to the workers;

a capacity manager coupled to the storage subsystem to manage the capacity of the system based on task load information on the tasks in the task data structure, on the available workers, and on the available worker task skills;

10   a training unit coupled to the network and to the capacity manager to automatically train workers at one or more task skills according to on or more related training scenarios; and

a post-processor coupled to the network and to the task submission unit to produce result data from the task results corresponding to the tasks of a process

15   for a unit of source data, including any defined post-processing of the task results, and to send the result data to the customer of the process,

such that the training unit trains workers automatically substantially without human management.

5.   A system as recited in claim 4,

20   wherein the storage subsystem further includes

a database storing information on each remote worker including one or more task skills of the worker that define the types of task steps the worker is certified to carry out, information on one or more customers, and information on each process, the process information including the customer of the process, the order

25   of carrying out the task steps of the process, how the input for each task step is obtained from the results of prior task steps in the process, and any pre-processing and post-processing required; and

a data store for storing input and output information for the tasks, and

wherein the coupling between the certification unit and each of the task dispatcher, and the capacity manager is via the database.

6. A system as recited in claim 4, wherein the variety of jobs include a plurality of
5   members of the set consisting of: data entry, telesales, voice transcription, translation, image categorization, sales lead incubation, auditing, repair of documents after OCR, photo retouching, paralegal processes, call center quality assurance, and editorial work.

7. A system for automatically managing a plurality of remote workers carrying out a variety of jobs for one or more customers, each job including a process of a set of one or
10   more task steps and a set of associated source data units, the system connected to a network, each worker able to communicate with the system using a worker terminal connectable to network, the system comprising:

a storage subsystem containing

a database storing information on each remote worker including one or
15   more task skills of the worker that define the types of task steps the worker is certified to carry out, information on one or more customers, and information on each process, the process information including the customer of the process, the order of carrying out the task steps of the process, how the input for each task step is obtained from the results of
20   prior task steps in the process, and any pre-processing and post-processing required;

a task data structure to store tasks to be completed, each task defined by a task step and a unit of input for the task step; and

a data store for storing input and output information for the tasks;

25   a mechanism coupled to the storage subsystem to accept units of source data from the customers;

a pre-processor coupled to the storage subsystem to carry out any defined pre-processing for the accepted source data;

a mechanism coupled to the network to accept requests from one or more of the remote workers for tasks;

a task dispatcher coupled to the storage subsystem and to the network for dispatching a task from the task data structure to a remote worker requesting tasks, the dispatching according to one or more task dispatch rules;

a task submission unit coupled to the storage subsystem to receive the task results from the remote workers for the task dispatched to the workers;

a post-processor coupled to the storage subsystem to carry out any defined post-processing of the task results corresponding to the tasks of a process for a unit of source data to produce result data for the unit of source data;

a mechanism coupled to the storage subsystem to send the result data to the customers;

a capacity manager coupled to the storage subsystem to manage the capacity of the system based on task load information on the tasks in the task data structure, on the available workers, and on the available worker task skills; and

a training unit coupled to the network and to the storage subsystem to automatically train workers at one or more task skills according to related training scenarios,

such that the training unit trains workers automatically substantially without human management.

8.   A system as recited in claim 7, wherein the variety of jobs include a plurality of members of the set consisting of: data entry, telesales, voice transcription, translation, image categorization, sales lead incubation, auditing, repair of documents after OCR, photo retouching, paralegal processes, call center quality assurance, and editorial work.

9.   A carrier medium carrying computer readable code segments to instruct one or more

processors of a processing system to carry out a method of automatically managing a

plurality of remote workers carrying out a variety of jobs for one or more customers,

each job including a process of a set of one or more task steps and a set of units of

5   source data, the medium comprising:

one or more code segments to instruct the one or more processors to store in a

database information on each remote worker including one or more task skills of

the worker that define the types of task steps the worker is certified to carry out;

one or more code segments to instruct the one or more processors to store in

10   the database information on the customers;

one or more code segments to instruct the one or more processors to store in

the database information on each process, including the customer of the process,

the order of carrying out the task steps of the process, how the input for each task

step is obtained from the results of prior task steps in the process, and any pre-

15   processing and post-processing required;

one or more code segments to instruct the one or more processors to accept

units of source data from the customers;

one or more code segments to instruct the one or more processors to carry out

any defined pre-processing for the units of source data received from the

20   customers;

one or more code segments to instruct the one or more processors to store in a

task data structure information on tasks to be completed, each task defined by a

task step and a unit of input for the task step;

one or more code segments to instruct the one or more processors to dispatch,

25   upon receiving a task request from a remote worker, a task from the stored tasks

to be completed to the remote worker according to one or more task dispatch

rules;

one or more code segments to instruct the one or more processors to accept task results from the remote workers for the tasks dispatched to the workers;

one or more code segments to instruct the one or more processors to carry out any defined post-processing of the task results corresponding to the tasks of a process for a unit of source data to produce result data for the unit of source data;

one or more code segments to instruct the one or more processors to manage the capacity of the system based on information about the stored tasks;

one or more code segments to instruct the one or more processors to send the result data to the customers; and

one or more code segments to instruct the one or more processors to automatically train workers at one or more task skills according to on or more related training scenarios,

such that the training of the workers occurs substantially without human management.

10.   A method of automatically managing a plurality of workers carrying out a variety of jobs for one or more customers, each job including a process of a set of one or more task steps and a set of units of source data, the method comprising:

storing in a database information on each worker including one or more task skills of the worker that define the types of task steps the worker is certified to carry out;

storing in the database information on each process;

receiving the units of source data;

storing in a task data structure information on tasks to be completed, each task defined by a task step and input for the task step;

storing in the database information on each remote worker including one or more task skills of the worker that define the types of task steps the worker is certified to carry out;

dispatching a task from the stored tasks to be completed to a worker;

receiving the task result from the worker for the task dispatched to the worker after the worker completes the task;

training workers at one or more task skills according to one or more training scenarios related to the task skills,

such that the training of workers at one or more task skills occur automatically substantially without human management.

11. A method as recited in claim 10, further comprising:

producing result data from the task results of the tasks of a process and sending the result data to the customer of the process.

12. A method as recited in claim 10, wherein dispatching is to a remote worker via the Internet and wherein the remote worker completes the task at remote location.

13. A method as recited in claim 12, wherein the storing of process information includes storing information on any required pre-processing of source data and on any required post-processing, and wherein the source data receiving includes carrying out any pre-processing required for the source data according to the stored process information, and wherein the producing result data further includes carrying out any post-processing required according to the stored process information.

14. A method as recited in claim 10, wherein the dispatching occurs upon receiving a task request from the worker.

15. A method as recited in claim 10, wherein the task request is received from the worker automatically when the worker logs on.

16. A method as recited in claim 10, wherein the variety of jobs include a plurality of members of the set consisting of: data entry, telesales, voice transcription, translation, image categorization, sales lead incubation, auditing, repair of documents after OCR, photo retouching, paralegal processes, call center quality assurance, and editorial work.

17. A method as recited in claim 10, further comprising:

managing the capacity, including determining one or more of the training scenarios based on the distribution of tasks in the task data structure, required task skills, and available workers having the required task skills.

18. A method as recited in claim 17, wherein managing the capacity further includes projecting the task demand and providing additional training scenarios when a shortfall is predicted.

19. A method as recited in claim 18, wherein managing the capacity further includes informing the workers of availability of the additional training scenarios.

20. A method as recited in claim 12, wherein the training is to a remote worker via the Internet.

21. A method as recited in claim 10, further comprising:

certifying workers as having one or more task skills.

22. A method as recited in claim 21, wherein the dispatching occurs according to a set of one or more dispatch rules.

23. A method as recited in claim 22, wherein the dispatch rules includes that the worker a task is assigned to must have the task skill for the task step.

24. A method as recited in claim 22, wherein the dispatching further occurs to satisfy one or more task dispatch objectives.

25. A method as recited in claim 22, wherein the task data structure is part of the database and wherein the dispatching includes forming a query on the database.

26. A method as recited in claim 25, wherein the database is a relational database including a set of tables.

27. A method as recited in claim 21, wherein one of the training scenarios for a particular task skill is practicing the task step associated with the task skill.

28.   A method as recited in claim 27, wherein another of the training scenarios for the particular task skill is a task skill test in the particular task skill.

29.   A method as recited in claim 21, wherein the information stored in the database for each worker includes one or more qualifications of the worker, and wherein at least one of the training scenarios requires the worker undergoing training to have a related qualification.

30.   A method as recited in claim 21, further comprising

screening potential workers, each successfully screened potential worker becoming an applicant,

wherein the training scenarios are offered to both workers and applicants.

31.   A system for automatically managing a plurality of workers carrying out a variety of jobs for one or more customers, each job including a process of a set of one or more task steps and a set of associated source data units, the system connected to a network, each worker having one or more task skills and able to communicate with the system using a worker terminal connectable to network, the system comprising:

a storage subsystem containing a task data structure to store tasks to be completed, each task defined by a task step and input for the task step from source data received from the customer;

a task dispatcher coupled to the network and to the task data structure to dispatch a task from the task data structure to an available worker;

a task submission unit coupled to network to receive the task result from the worker for the task dispatched to the worker; and

a training unit coupled to the network to automatically train workers at one or more task skills according to on or more related training scenarios,

such that the quality unit assesses the quality of at least some of the task results automatically substantially without human management.

32. A system as recited in claim 31, further comprising:

> a post-processor coupled to the network and to the quality unit to produce result data from the task results of the tasks a process and to send the result data to the customer of the process.

5   33. A system as recited in claim 31, further comprising:

> a certification unit coupled to the dispatcher to certify workers as having one or more task skills.

34. A system as recited in claim 33, further comprising:

> a screening unit to screen potential workers, each successfully screened potential worker becoming an applicant.

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35. A system as recited in claim 34, wherein the training unit further is to train applicants, and wherein the certification unit further is to certify applicants as having one or more task skills.

36. A system as recited in claim 33,

15   wherein the storage subsystem further includes

> a database storing information on each remote worker including one or more task skills of the worker that define the types of task steps the worker is certified to carry out, information on one or more customers, and information on each process, the process information including the customer of the process, the order
20   of carrying out the task steps of the process, how the input for each task step is obtained from the results of prior task steps in the process, and any pre-processing and post-processing required; and

> a data store for storing input and output information for the tasks, and

wherein the coupling between the certification unit and each of the training unit, the task
25   dispatcher, and the capacity manager is via the database.

37. A system as recited in claim 31, wherein dispatching is to a remote worker via the Internet and wherein the remote worker completes the task at remote location.

38. A system as recited in claim 31, wherein the dispatching occurs upon receiving a task request from the worker.

5   39. A system as recited in claim 31, wherein the task request is received from the worker automatically when the worker logs on.

40. A system as recited in claim 31, wherein the variety of jobs include a plurality of members of the set consisting of: data entry, telesales, voice transcription, translation, image categorization, sales lead incubation, auditing, repair of documents after OCR, photo retouching, paralegal processes, call center quality assurance, and editorial work.

41. A system as recited in claim 36, wherein the task data structure is part of the database.

42. A system as recited in claim 36, wherein the data store is part of the database.

43. A system as recited in claim 36, wherein the database is a relational database including a set of tables.

15 44. A system as recited in claim 36, further comprising:

        a capacity manager coupled to the storage subsystem and to the training unit to manage the capacity of the system including determining one or more of the training scenarios based on the distribution of tasks in the task data structure, required task skills, and available workers having the required task skills.

20 45. A system as recited in claim 33, wherein one of the training scenarios for a particular task skill is practicing the task step associated with the task skill.

46. A system as recited in claim 45, wherein another of the training scenarios for the particular task skill is a task skill test in the particular task skill.

47. A system as recited in claim 33, wherein the information stored in the database for
25   each worker includes one or more qualifications of the worker, and wherein at least one

of the training scenarios requires the worker undergoing training to have a related qualification.

48. A system for automatically managing a plurality of workers carrying out a variety of jobs for one or more customers, each job including a process of a set of one or more task steps and a set of units of source data, the method comprising:

a storage means containing:

a database for storing information on each process and information on each worker including one or more task skills of the worker that define the types of task steps the worker is certified to carry out, and

a task data structure for storing information on tasks to be completed, each task defined by a task step and input for the task step;

means for receiving the units of source data;

means for dispatching a task from the stored tasks to be completed to a worker;

means for receiving the task result from the worker for the task dispatched to the worker after the worker completes the task;

means for training workers at one or more task skills, including providing one or more training scenarios; and

means for certifying applicants and workers as having one or more task skills.

49. A system as recited in claim 48, wherein the variety of jobs include a plurality of members of the set consisting of: data entry, telesales, voice transcription, translation, image categorization, sales lead incubation, auditing, repair of documents after OCR, photo retouching, paralegal processes, call center quality assurance, and editorial work.

50. A system as recited in claim 48, wherein the dispatching occurs upon receiving a task request from the worker.

51. A system as recited in claim 48, wherein the task request is received from the worker automatically when the worker logs on to the system.

52. A system as recited in claim 48, further comprising:

        means for managing the capacity, including determining one or more of the training scenarios based on the distribution of tasks in the task data structure, required task skills, and available workers having the required task skills.

53. A system as recited in claim 52, wherein managing the capacity further includes projecting the task demand and providing additional training scenarios when a shortfall is predicted.

54. A carrier medium carrying computer readable code segments to instruct one or more processors of a processing system to carry out a method of automatically managing a plurality of workers carrying out a variety of jobs for one or more customers, each job including a process of a set of one or more task steps and a set of units of source data, the medium comprising:

        one or more code segments to instruct the one or more processors to store in a database information on each remote worker and on each process, the worker information including one or more task skills of the worker that define the types of task steps the worker is certified to carry out;

        one or more code segments to instruct the one or more processors to store in a task data structure information on tasks to be completed, each task defined by a task step and input for the task step corresponding to source data from the customer of the process of the task step;

        one or more code segments to instruct the one or more processors to dispatch a task from the stored tasks to be completed to a worker;

        one or more code segments to instruct the one or more processors to accept task result from the worker for the task dispatched to the worker;

one or more code segments to instruct the one or more processors to provide to workers one or more training scenarios to train workers at one or more task skills; and

one or more code segments to instruct the one or more processors to certify workers as having one or more task skills.

55. A carrier medium as recited in claim 54, wherein dispatching is to a remote worker via the Internet and wherein the remote worker completes the task at remote location.

56. A carrier medium as recited in claim 54, wherein the dispatching occurs upon receiving a task request from the worker.

57. A carrier medium as recited in claim 54, wherein the task request is received from the worker automatically when the worker logs on.

58. A carrier medium as recited in claim 54, wherein the variety of jobs include a plurality of members of the set consisting of: data entry, telesales, voice transcription, translation, image categorization, sales lead incubation, auditing, repair of documents after OCR, photo retouching, paralegal processes, call center quality assurance, and editorial work.

56. A carrier medium as recited in claim 54, wherein the dispatching occurs upon receiving a task request from the worker.

57. A carrier medium as recited in claim 54, wherein the task request is received from the worker automatically when the worker logs on.

59. A carrier medium as recited in claim 54, further comprising:

one or more code segments to instruct the one or more processors to manage the capacity, including determining one or more of the training scenarios based on the distribution of tasks in the task data structure, required task skills, and available workers having the required task skills.

60.   A carrier medium as recited in claim 59, wherein managing the capacity further includes projecting the task demand and providing additional training scenarios when a shortfall is predicted.

61.   A computer implemented method of automatically managing one or more human workers carrying out variety of processes, each process to manipulating source data to produce result data, the process including a set of one or more task steps, each task step having an input corresponding to the source data and when completed on the input resulting in a corresponding task result, the method comprising for each process:

receiving units of source data from a customer; and

for each unit of source data

for each task step of the set for the unit of source data;

dispatching the task step and its corresponding input unit to a worker; and

receiving from the worker, after the worker carries out the dispatched task step on the input unit, the task result corresponding to the dispatched task step and input unit,

wherein each worker is certified to have one or more task skills,

wherein each task step requires a corresponding task skill,

wherein the dispatching of any task step occurs automatically substantially without human intervention to a worker who is certified to have the corresponding task skill of the task step,

and wherein the variety of processes include a plurality of members of the set consisting of: data entry, telesales, voice transcription, translation, image categorization, sales lead incubation, auditing, repair of documents after OCR, photo retouching, paralegal processes, call center quality assurance, and editorial work.

62.   A method as recited in claim 61, wherein the task step dispatching is from a server computer system over a network to a remote worker, and wherein the worker carries out the task step at a location remote from the server computer system.

63.   A method as recited in claim 62, wherein the dispatching occurs upon receiving a task request from the worker.

64.   A method as recited in claim 62, wherein the task request is received from the worker automatically when the worker logs on.

65.   A method as recited in claim 61, further comprising

        training workers at one or more task skills according to one or more training scenarios related to the task skills,

    such that the training of workers at one or more task skills occur automatically substantially without human management.

66.   A method as recited in claim 62, wherein the source data and the result data is provided in electronic form.

67.   A method as recited in claim 66, further comprising, for each unit of source data,

        generating the result data for the unit of source data from one or more of the task results corresponding to the task steps of the set; and

        sending the result data for the unit of source data to the customer.